



**Australian Government**  
**National Measurement  
Institute**

Bradfield Road, West Lindfield NSW 2070

## **Supplementary Certificate of Approval**

### **NMI S674**

Issued by the Chief Metrologist under Regulation 60  
of the  
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Nuweigh Model KIA171 Digital Indicator

submitted by            Newcastle Weighing Services Pty Ltd  
                                 104-114 Hannell Street  
                                 Wickham NSW 2293

**NOTE:** This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on 1/12/19, and then every 5 years thereafter.

#### DOCUMENT HISTORY

<b>Rev</b>	<b>Reason/Details</b>	<b>Date</b>
0	Pattern & variant 1 approved – certificate issued	28/11/14

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S674' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S674' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0B.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to an instrument incorporating the pattern approved herein shall be within the limits specified herein and in any approval documentation for the other components

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.



**Dr A Rawlinson**

TECHNICAL SCHEDULE No S674

**1. Description of Pattern** **approved on 28/11/14**

A Nuweigh model KIA171 digital mass indicator (Figure 1) which may be configured to form part of:

- A class  $\text{III}$  weighing instrument with a single weighing range of up to 10 000 verification scale intervals; or
- A class  $\text{IIII}$  weighing instrument with a single weighing range of up to 1000 verification scale intervals.

The instrument has a stainless steel enclosure with a LED display for display of the weight value.

The pattern operates from mains AC power (100 ~ 240 V AC, 50/60 Hz).

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause **1.5 Interfaces** below).

TABLE 1 – Specifications

Maximum number of verification scale intervals	10 000 (class $\text{III}$ ) 1000 (class $\text{IIII}$ )
Minimum sensitivity	0.75 $\mu\text{V}$ / scale interval
Excitation voltage	5 V DC
Maximum excitation current	114 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	43.75 $\Omega$
Maximum load cell impedance	2000 $\Omega$
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	70 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Load cell connection	4-wire or 6-wire shielded

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

**1.1 Zero**

A zero-tracking device may be fitted.

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

**1.2 Tare**

A semi-automatic subtractive tare device of up to the maximum tare capacity of the instrument may be fitted.

A pre-set and/or automatic subtractive tare device of up to the maximum capacity of the instrument may be fitted.

### **1.3 Display Check**

A display check is initiated whenever power is applied.

### **1.4 Additional Features**

Instruments may be fitted with a number of additional functions including checkweighing (UNDER/ACCEPT/OVER) range mode, target weight mode and target percentage mode. The additional functions (other than the indications of measured mass, i.e. gross, tare, net, totals, displayed either on the indicator or on an auxiliary or peripheral device) are not approved for trade use.

Instruments may also be fitted with an 'accumulator' function. This function shall not be used for trade use.

Note: In particular circumstances (e.g. in regard to weighbridge or public weighbridge operation), Trade Measurement legislation or other NMI Certificates of Approval may impose requirements in regard to specific features, methods of operation, or records to be provided (and in what form).

Certain features of this instrument are able to be configured by the installer or user. Whilst NMI believes that an acceptable configuration can be achieved for typical basic modes of operation, it may also be possible for the instrument to be configured to produce unacceptable configurations, and use of some configurations may be inappropriate in different situations. It is the responsibility of the installer and user to ensure that the configuration is acceptable and meets relevant requirements for any particular situation.

### **1.5 Interfaces**

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with NMI General Supplementary Certificate No S1/0B (in particular in regard to the data and its format).

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Instruments may be fitted with RS-232 serial data interface, 20 mA current loop, Ethernet TCP/IP interface, USB interface, wireless Lan Card, Fiber-optic and digital inputs/outputs.

### **1.6 Linearisation Facility**

Instruments are fitted with a linearisation correction facility having up to five correction points.

### **1.7 Verification Provision**

Provision is made for the application of a verification mark.

## 1.8 Software

The non-legally relevant software is designated version Vx.xx.xx and the legally relevant software is designated version LR V1.00.



The non-legally relevant software version number appears in the switch-on display sequence when the power is first applied to the instrument.

The instructions for accessing the legally relevant version are as follows (starting from the normal weighing mode):

- Press the 'Menu' key and then AUDIT is displayed.
- Press the 'Enter' key to enter AUDIT menu level and then LRV is displayed.
- Press the 'Enter' key while 'LRV' is displayed. The legally relevant version is displayed.
- Press the 'Menu' key to return to the normal weighing mode.

## 1.9 Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Nuweigh
Indication of accuracy class	 or 
Maximum capacity (for each range)	<i>Max</i> ..... kg #1
Minimum capacity (for each range)	<i>Min</i> ..... kg #1
Verification scale interval (for each range)	<i>e</i> = ..... kg #1
Maximum subtractive tare	<i>T</i> = - ..... kg #2
Serial number of the instrument	.....
Pattern approval mark for the indicator	NMI S674
Pattern approval mark for other components	..... #3

#1 These markings shall also be shown near the display of the result if they are not already located there.

#2 This marking is required if *T* is not equal to *Max*.

#3 May be located separately from the other markings.

In addition, instruments not greater than 100 kg capacity carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

## 1.10 Sealing Provision

Provision is made for access to the calibration switch within the instrument to be sealed using a 'lead and wire' type seal with drilled screws as shown in Figure 2. Alternatively, destructible labels may be placed over an access hole to the calibration switch and opposite sides of a join in the instrument housing as shown in Figure 3.

Alternatively the indicator is sealed by recording the audit trail counter on verification.

Access to allow changing of set-up parameters including calibration parameters must be protected by a passcode.

The indicator automatically increments a configuration and/or calibration value (audit trail number) each time the indicator is re-configured and/or calibrated.

The value(s) of these counters may be recorded on a destructible adhesive label attached to the instrument (e.g. as CONFIG x, CAL y).

Any subsequent alteration to the calibration or configuration will be evident as the recorded values and the current counter values will differ.

The instructions for accessing the configuration and calibration audit trail are as follows (starting from the normal weighing mode):

- Press the 'Menu' key and then AUDIT is displayed.
- Press the 'Enter' key to enter AUDIT menu level and then press the ▼ key once while 'CALIB' is displayed. The 'CAL' counter value is displayed; or
- Press the ► key twice while 'CFG' is displayed. The 'CONFIG' counter value is displayed.
- Press the 'Menu' key to return to the normal weighing mode.

## **2. Description of Variant 1**

**approved on 28/11/14**

The Nuweigh model KIA171-DC (Figure 1) which is similar to the pattern but operating from 10 – 60 V DC supplied by an AC/DC mains adaptor.

Note: The AC/DC mains adaptor supplied for the instrument was a Power Supply model YS01 – 120050A (12 V, 0.5 A) – the submitter should be consulted regarding the acceptability of alternative power supply units.

### TEST PROCEDURE No S674

Instruments should be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

#### **Maximum Permissible Errors**

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE S674 – 1



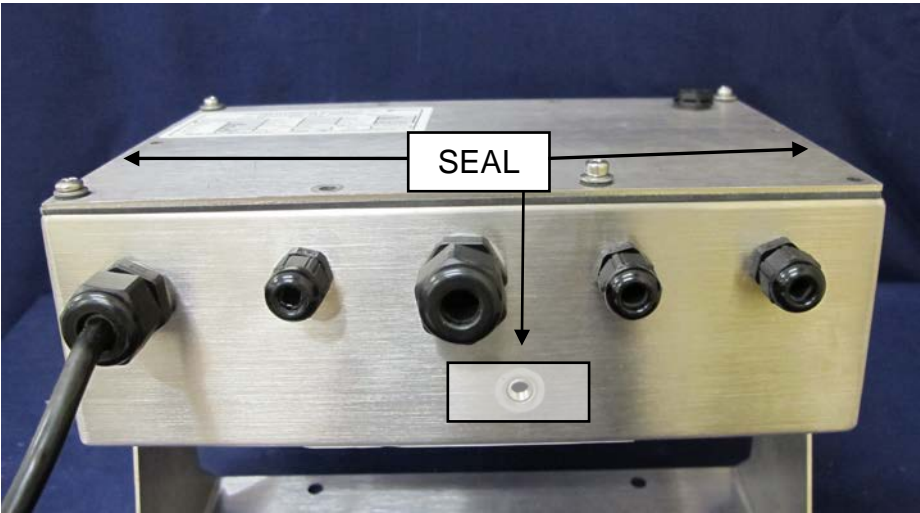
Nuweigh Model KIA 171 / 171-DC Digital Indicator (Pattern & Variant 1)

FIGURE S674 – 2



Typical Sealing Using Lead and Wire Type with Drilled Screws

FIGURE S674 – 3



Typical Sealing Using Destructible Adhesive Labels

~ End of Document ~